

REMARKS:

In the Office Action dated January 7, 2010, claims 39 and 41-54, in the above-identified U.S. patent application were rejected. Reconsideration of the rejections is respectfully requested in view of the above amendments and the following remarks. Claims 39 and 41-55 remain in this application and claims 1-38 and 40 have been canceled.

The specification was objected to as failing to provide antecedent basis for the language "negative receptors" in claim 45. Claim 45 has been amended to delete the term "negative". In view of this amendment, applicants request that this objection be withdrawn.

Claim 45 was rejected under 35 USC §112, second paragraph, as indefinite regarding the language "negative receptor". Claim 45 has been amended to delete the term "negative". In view of this amendment, applicants request that this rejection be withdrawn.

Claims 39, 41-46, 48, 49, 53 and 54 -55 were rejected under 35 USC §102(b) as anticipated by Heller. Heller discloses the transport and attachment of specific binding entities to specific micro-locations (see abstract and column 5, lines 45-54). A disclosure of oligonucleotide synthesis can be found in the paragraph bridging columns 8 and 9 and columns 20 to 22 with reference to Fig. 14. Col. 17 line 34 refers to "conventional techniques" of oligonucleotide synthesis (phosphoramidite chemistry, see Example 1). So the fact that a substrate made of glass, silicon dioxide, plastic or ceramic can be used (col. 10, lines 1011 1) cannot be regarded as a suggestion of photochemistry based methods, even though these substrates may be transparent. Furthermore, the substrate may be coated with non-transparent layers, such as aluminium. Thus, even when Heller uses glass as the substrate, the substrate is not

necessarily transparent and therefore the receptors or building blocks cannot be immobilized using photoactivation. For example, col. 12, lines 52-53, indicates that the base substrate is overcoated with a silicon dioxide insulation coat. Col. 12, lines 55-56, indicates that the next layer is a metal layer such as aluminum. Applicants respectfully contend that Heller suggests the use of glass as a substrate material but during fabrication the glass is coated with materials which make the substrate no longer transparent because Heller does not use photochemistry based methods.

The Office Action contends that columns 5, 7 and 20 in Heller disclose fluorescence excitation which is encompassed by the photoactivating language of the present claims. Though Heller discusses the use of fluorescent binding reactions, this is used for *detection* of hybridized complexes not for immobilizing the receptors or building blocks. Heller does not disclose any step which corresponds to step c) in claim 39. Claims 39 and 55 have been amended to clarify that in step (c) the receptor building blocks are site- or/and time-specifically immobilized by photoactivating predetermined positions on the support. The language regarding synthesis and analyte determination has been moved after step (f) to clarify that the determination is separate from the photoactivated immobilizing step (c). Applicants point out that Heller does not disclose monitoring and controlling of receptor synthesis. The "control" disclosed in column 6, lines 3-8, and column 9, lines 13-32, relates to the analyte determination on the device, not the synthesis of the receptors. In column 20, line 55, to column 22, line 6, a combinatorial biopolymer synthesis is described but synthesis monitoring and control is not disclosed. In view of the above amendments and discussion, applicants request that this rejection be withdrawn.

Claims 39 and 41-55 were rejected under 35 USC §103(a) as unpatentable over Heller and Winkler. As discussed above, Heller does not suggest or disclose light

directed synthesis of polymeric receptors by specifically photoactivating predetermined positions on the support and does not enable detection of fluorescent binding reactions by using a sandwich arrangement of device and detection system. Winkler is cited for the disclosure of channels but does not suggest or disclose a support which is at least partially transparent such that light directed synthesis of polymeric receptors by specifically photoactivating predetermined positions on the support can be carried out. Therefore, Winkler does not cure the above discussed deficiencies in Heller and applicants request that this rejection be withdrawn.

Applicants respectfully submit that all of claims 39 and 41-55 are now in condition for allowance. If it is believed that the application is not in condition for allowance, it is respectfully requested that the undersigned attorney be contacted at the telephone number below.

In the event this paper is not considered to be timely filed, the Applicant respectfully petitions for an appropriate extension of time. Any fee for such an extension together with any additional fees that may be due with respect to this paper, may be charged to Counsel's Deposit Account No. 02-2135.

Respectfully submitted,

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